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IR EMISSION AND UV EXTINCTION IN TWO OPEN CLUSTERS

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Recent models of interstellar extinction have shown the importance of understanding *both* the UV and IR properties of interstellar dust grains. (Draine and Anderson, 1985; Hecht, 1986). IRAS data have shown variations in 60 and 100 μm emissions presumably due to the presence of IR cirrus, while recent observations in the UV by Fitzpatrick and Massa (1986,1988) have identified components in the UV extinction curve which vary in different star regions. The Draine and Anderson (1985) model connects these results by proposing that different size variations in interstellar grains would cause distinct changes in both the IR emission and the UV extinction.

In order to test this model it is necessary to make observations in well defined locations away from peculiar extinction regions. In the infrared this means looking away from the galactic plane so as to limit non-local sources of IR radiation. In the UV variations in extinction are best understood by studying clusters of B stars since the underlying spectra of these stars are well understood and all of the stars in a given cluster are at the same distance from us (Massa et al., 1985). Thus, any differences observed in the measured extinction will presumably be due to changes in the intervening cirrus dust. If the star clusters are distant than the IR emission should be primarily from dust in front of the clusters.

We have chosen to study two open clusters that are out of the galactic plane and which contain a number of late B and early A stars suitable for UV extinction studies, and whose IRAS data show variations in the 60/100 μm ratio (IC 4665 and NGC 1647) . Based on the Draine and Anderson (1985) model we would expect to see variations in their UV extinction curves that correlate with the IR cirrus emission. We have obtained low resolution spectra of the cluster members with IUE and we will present results showing the correlation between the IR emission and the UV extinction curve shape, using the parameterization described by Fitzpatrick and Massa (1986, 1988).

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